UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2003/00921

November 10, 2003

Kemper McMaster
U.S. Fish and Wildlife Service
2600 S.E. 98th Avenue
Suite 100
Portland, OR 97266

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Proposed Bridge Creek Fish Passage and Irrigation Improvement Projects, West Fork Bridge Creek, Lower John Day River Subbasin, Wheeler County, Oregon

Dear Mr. McMaster:

Enclosed is a document containing a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Bridge Creek Fish Passage and Irrigation Improvement project in the lower John Day River subbasin, Wheeler County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

Any withdrawal of flows that would impair habitat conditions in the Lower John Day River is a habitat-modifying activity that may harm listed species and therefore may be considered "take" under the ESA.[1] However, because instream flows would continue to be withdrawn from the existing facility whether or not the proposed projects are constructed, NOAA Fisheries does not consider any take associated with such a withdrawal as incidental to the proposed action. Therefore, compliance with these terms and conditions will not remove the prohibition against take due to any instream flows withdrawn from the irrigation structures. NOAA Fisheries encourages the U.S. Fish and Wildlife Service to seek opportunities to implement the *Basinwide Salmon Recovery Strategy*, published by the

[1] See, 64 FR 60727 (November 8, 1999) (defining 'harm' as an element of 'take' in the ESA, citing removing water or otherwise altering streamflow when it significantly impairs spawning, migration, feeding or other essential behavioral patterns as an example), and 65 FR 42522 (July 10, 2000) (applying take prohibition to threatened species).

Federal Caucus in 2000, by conserving flows in occupied MCR steelhead habitat in the Lower John Day River basin.

This document also contains a consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for chinook salmon (*O. tshawytscha*). As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation, 305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days of receiving an EFH conservation recommendation.

If you have any questions regarding this letter, please contact Brett Farman of my staff in the Oregon Habitat Branch at 541.975.1835 ext. 228.

Sincerely,

for Michael R Course

D. Robert Lohn
Regional Administrator

cc: Tim Unterwegner, ODFW
Marisa Meyer, USFWS

Endangered Species Act - Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Bridge Creek Fish Passage and Irrigation Improvement Projects,
West Fork Bridge Creek, Lower John Day River Subbasin,
Wheeler County, Oregon

Agency:	U.S. Fish and Wildlife Service
Consultation Conducted By:	National Marine Fisheries Service, Northwest Region
Date Issued:	November 10, 2003
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
Refer to:	**2003/00921**

TABLE OF CONTENTS

1. INTRODUCTION 1
   - 1.1 Background and Consultation History 1
   - 1.2 Proposed Action 2
   - 1.3 Description of the Action Area 3

2. ENDANGERED SPECIES ACT - BIOLOGICAL OPINION 3
   - 2.1 Evaluating the Effects of the Proposed Action 3
     - 2.1.1 Biological Requirements 4
     - 2.1.2 Status and Generalized Life History of Listed Species 4
     - 2.1.3 Environmental Baseline in the Action Area 6
   - 2.2 Analysis of Effects 9
     - 2.2.1 Habitat Effects 10
     - 2.2.2 Species Effects 14
     - 2.2.3 Cumulative Effects 14
     - 2.2.4 Consistency with Listed Species ESA Recovery Strategies 15
   - 2.3 Conclusions 16
   - 2.4 Conservation Recommendations 17
   - 2.5 Reinitiation of Consultation 18
   - 2.6 Incidental Take Statement 18
     - 2.6.1 Amount or Extent of Take 18
     - 2.6.2 Reasonable and Prudent Measures 19
     - 2.6.3 Terms and Conditions 20

3. MAGNUSON-STEVENS ACT 30
   - 3.1 Statutory Requirements 30
   - 3.2 Identification of EFH 31
   - 3.3 Proposed Actions 31
   - 3.4 Effects of Proposed Action on EFH 32
   - 3.5 Conclusion 32
   - 3.6 EFH Conservation Recommendations 32
   - 3.7 Statutory Response Requirement 32
   - 3.8 Supplemental Consultation 33

4. REFERENCES 34

1. INTRODUCTION

The Endangered Species Act (ESA) of 1973 (16 USC 1531-1544), as amended, establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with NOAA's National Marine Fisheries Service (NOAA Fisheries) and U.S. Fish and Wildlife Service (together "Services"), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their designated critical habitats. This biological opinion (Opinion) is the product of an interagency consultation pursuant to section 7(a)(2) of the ESA and implementing regulations 50 CFR 402.

The analysis also fulfills the essential fish habitat (EFH) requirements under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan. Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§ 305(b)(2)).

The U.S. Fish and Wildlife Service (USFWS) proposes to fund the replacement of an existing concrete dam and four existing push-up dams with permanent structures that provide for fish passage. The purpose of the Bridge Creek Fish Passage and Irrigation Improvement Projects (Projects) are to improve fish passage and eliminate yearly disruption of stream substrate through the use of gravel push-up dams. For purposes of this consultation, instream flow diversions from the existing irrigation diversions will be evaluated as a part of the environmental baseline and future water withdrawals will be evaluated as cumulative effects, although any future withdrawals that require Federal action will be evaluated in a separate biological opinion. The administrative record for this consultation is on file at the Oregon Habitat Branch office.

1.1 Background and Consultation History

On July 18, 2003, NOAA Fisheries received a letter from the USFWS, dated July 15, 2003, requesting ESA section 7 informal consultation on these Projects which are determined to be "may affect, likely to adversely affect" (NLAA) Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). Included in the package was a complete biological assessment (BA) and EFH assessment on the proposed Projects. Consultation was initiated on July 18, 2003, when the package was received.

The Projects are not likely to affect tribal trust resources. Because the action would not affect tribal trust resources, no tribes would be affected and further tribal coordination is not necessary.

1.2 Proposed Action

Proposed actions are defined in the Services' consultation regulations (50 CFR 402.02) as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." Additionally, U.S. Code (16 U.S.C. 1855(b)(2)) further defines a Federal action as "any action authorized, funded, or undertaken or proposed to be authorized, funded, or undertaken by a Federal agency." Because the USFWS proposes to fund the action that may affect listed resources, it must consult under ESA section 7(a)(2) and MSA § 305(b)(2).

The proposed Projects will improve fish passage by replacing an aging concrete diversion dam and four yearly push-up dams with two permanent diversion structures which will allow for fish passage. The current practice of creating push-up dams creates annual fish passage barriers on the West Fork of Bridge Creek, in Wheeler County, Oregon. Bridge Creek is a tributary to the John Day River in the Lower John Day River subbasin, which is habitat for MCR steelhead and resident trout. Funding to improve the irrigation structures has been secured from the USFWS Partner's for Fish and Wildlife program in cooperation with private land owners.

The Projects are designed to be consistent with the NOAA Fisheries' *Designing Fish Screens for Fish Protection at Water Diversions* (NOAA Fisheries 1996a), the *Draft Anadromous Salmonid Passage Facility Guidelines and Criteria* (no date)[2] and the *Programmatic Biological Opinion, Standard Local Operating Procedures for Endangered Species (SLOPES II) for Certain Activities Requiring Department of the Army Permits in Oregon and the North Shore of the Columbia River* (refer to 2003/00850). All work will be completed within the designated in-water work window (July 15th to August 31st) (ODFW 2000) for either the 2003 or 2004 in-water work window, when adult MCR steelhead migration and spawning will not be occurring.

The proposed Projects will occur on the West Fork Bridge Creek, approximately 8 miles from it's confluence with the John Day River. The Projects will be on the Wade property (site 1) and the Brooks property (site 2). The Projects are within spawning and rearing habitat for MCR steelhead. Approximately 10 miles of spawning and rearing habitat for MCR steelhead exists above the site of the Projects.

Site one is a concrete diversion dam in a tightly constrained valley. The dam has maintenance and stability problems because of upstream sediment deposition and the depth of scour at the toe of the structure. The dam is approximately 5 feet high, and is a passage impediment for MCR steelhead. The proposed Projects will replace the concrete structure with seven rock weirs. The weirs are designed to be consistent with the Oregon Road/Stream Crossing Guide.[3] The structures are expected to provide enough water for the existing diversion screen to work

[2] Available at www.nwr.noaa.gov/1hydro/hydroweb/docs/release_draft.pdf

[3] Available at www.wildlandhydrology.com/assets/cross-vane.pdf

properly. The structures will eliminate the need to create push-up dams annually and are expected to create pool habitat for MCR steelhead.

The second structure will be constructed upstream of the first in an unconstrained valley with a lower gradient than the first structure. The BA indicates that the use of push-up dams in this location causes bank erosion, substrate disruption, and impedes fish passage. The replacement structure will be a "lay-flat" diversion structure that can be lowered when not in use to allow for unrestricted fish passage. While in use, a fishway will allow for fish passage. The Projects will allow landowners to divert water for irrigation while maintaining passage for fish.

1.3 Description of the Action Area

An action area is defined by the Services' regulations (50 CFR Part 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area affected by the proposed action starts at the project location on the West Fork of Bridge Creek and extends upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the Projects includes the immediate portions of the watershed containing the Projects, and extends upstream 150 feet above the construction area and downstream 300 feet below the construction area. NOAA Fisheries believes that these areas are those that may reasonably be affected, temporarily or in the long term, by the proposed Projects. This area serves as a spawning and rearing habitat as well as a migratory corridor for juvenile and adult MCR steelhead.

2. ENDANGERED SPECIES ACT - BIOLOGICAL OPINION

The objective of this Opinion is to determine whether the Projects are likely to jeopardize the continued existence of the MCR steelhead.

2.1 Evaluating the Effects of the Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA. In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations and when appropriate combines them with The Habitat Approach[4] (NOAA Fisheries 1999): (1) Consider the biological requirements and status of the listed species; (2) evaluate the relevance of the environmental baseline in the action

[4] The Habitat Approach is intended to provide guidance to NOAA Fisheries staff for conducting analyses, and to explain the analytical process to interested readers. As appropriate, the Habitat Approach may be integrated into the body of Opinions. NOAA staff are encouraged to share the Habitat Approach document with colleagues from other agencies and private entities who are interested in the premises and analysis methods.

area to the species' current status; (3) determine the effects of the proposed or continuing action on the species, and whether the action is consistent with any available recovery strategy; and (4) determine whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the effects of the environmental baseline, and any cumulative effects, and considering measures for survival and recovery specific to other life stages. In completing the jeopardy analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species. If jeopardy is found, NOAA Fisheries may identify reasonable and prudent alternatives for the action that avoid jeopardy.

The fourth step above (jeopardy) requires a two-part analysis. The first part focuses on the action area and defines the proposed action's effects in terms of the species' biological requirements in that area (*i.e.*, effects on essential features). The second part focuses on the species itself. It describes the action's effects on individual fish, populations, or both, and places that impact in the context of the ESU as a whole. Ultimately, the analysis seeks to determine whether the proposed action is likely to jeopardize a listed species' continued existence.

2.1.1 Biological Requirements

The first step NOAA Fisheries uses when applying ESA section 7(a)(2) to the listed ESUs considered in this Opinion includes defining the species' biological requirements within the action area. Biological requirements are population characteristics necessary for the listed ESUs to survive and recover to naturally-reproducing population sizes, at which time protection under the ESA would become unnecessary. The listed species' biological requirements may be described as characteristics of the habitat, population or both (McElhany *et al.,* 2000). Interim abundance targets for the MCR steelhead within the John Day River are represented in Table 1.

For actions that affect freshwater habitat, NOAA Fisheries may describe the habitat portion of a species' biological requirements in terms of a concept called properly functioning condition (PFC). The PFC is defined as the sustained presence of natural, habitat-forming processes in a watershed that are necessary for the long-term survival of the species through the full range of environmental variation (NOAA Fisheries 1999). The PFC, then, constitutes the habitat component of a species' biological requirements. Although NOAA Fisheries is not required to use a particular procedure to describe biological requirements, it typically considers the status of habitat variables in a matrix of pathways and indicators (MPI) (NOAA Fisheries b) that were developed to describe PFC in forested montane watersheds. In the PFC framework, baseline environmental conditions are described as "properly functioning", "at risk", or "not properly functioning".

2.1.2 Status and Generalized Life History of Listed Species

In this step, NOAA Fisheries also considers the current status of the listed species within the action area, taking into account population size, trends, distribution, and genetic diversity. To

assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species and also considers any new data that is relevant to the species' status.

The USFWS found that the Projects are LAA MCR steelhead. Based on the life histories of this ESU, the action agency determined that it is likely that juvenile MCR steelhead may be adversely affected by the proposed action.

The MCR steelhead ESU was listed as threatened under the ESA by NOAA Fisheries on March 25, 1999 (64 FR 14517). Protective regulations for MCR steelhead were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Biological information concerning the MCR steelhead is found in Busby *et al.* (1996). The major drainages in the MCR steelhead ESU are the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima river systems. NOAA Fisheries (2003) has indicated that the 5-year average (geometric mean) abundance of natural MCR steelhead was up from previous years' basin estimates in the ESU. The Klickitat, Yakima, Touchet, and Umatilla systems are all well below their interim abundance targets. The John Day and Deschutes are at or above their interim targets for abundance, however there is significant concern regarding the straying of fish into the Deschutes system from other ESUs (Table 1). The productivity estimate (λ) of the MCR ESU is approximately 0.98, indicating that the productivity of MCR steelhead is below its target of 1.0. NOAA Fisheries biological review team (BRT) has determined that the MCR ESU is likely to become endangered because of stock abundance and long-term productivity being depressed within the ESU.

The John Day River (JDR) is the largest river system in the range of MCR steelhead that is free of dams. There is currently no artificial propagation of steelhead in the system, and runs are driven almost exclusively by native stocks, making the JDR system unique within the ESU. There are a small number of straying hatchery fish in the JDR system from the Columbia River (Unterwegner and Gray 1997). Oregon Department of Fish and Wildlife (ODFW) estimates yearly returns of adult steelhead to the JDR basin from 3,900 to 36,400, with estimated escapement averaging 13,988 adults since 1987. NOAA Fisheries (2003) states that while the JDR system has met or exceeded interim abundance targets for the last 5 years, the long-term trend for abundance is still downward.

Table 1. Interim abundance targets for the MCR steelhead ESU (adapted from NOAA Fisheries 2003).

ESU/Spawning Aggregations*	Interim Abundance Targets	Interim Productivity Objective
Walla-Walla	2,600	Middle Columbia ESU populations are currently below recovery levels. The geometric mean, or Natural Replacement Rate (NRR), will therefore, need to be greater than 1.0
Umatilla	2,300	
Deschutes (Below Pelton Dam Complex)	6,300	
John Day		
North Fork	2,700	
Middle Fork	1,300	
South Fork	600	
Lower John Day	**3,200**	
Upper John Day	2,000	

*Populations in bold are addressed in this Opinion

The JDR and its tributaries, to include the South Fork John Day River (SFJDR), Middle Fork John Day River (MFJDR), and the Upper John Day River (UJDR) subbasin streams, provide spawning, rearing, and migratory habitat for adult, juvenile, and embryonic life stages of MCR steelhead. In 2002, the redd abundance in these three subbasins were at their highest levels since listing. Adult MCR steelhead enter the Columbia River beginning in the spring and migrate upriver through the summer, fall, and winter, seeking their tributary of origin. By early the following spring, the adults have reached their natal streams and spawn in gravel redds/nests from March to early June. Deposited eggs usually hatch by the middle July of the same year. The resulting juveniles will spend from one to four years rearing to smolt size, at which time they will begin their migration to the ocean.

Habitat requirements of the adult spawning, juvenile rearing, and adult and migratory habitat for this species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. (Bjornn and Reiser, 1991; NOAA Fisheries, 1996c; Spence *et al.*, 1996). The essential features that the proposed Projects may affect are: Substrate, water quality, water temperature, water velocity, cover/shelter, food, and riparian vegetation.

2.1.3 Environmental Baseline in the Action Area

The environmental baseline is defined as: "the past and present impacts of all Federal, state, or private actions and other human activities in the action area, including the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and

the impacts of state and private actions that are contemporaneous with the consultation in progress" (50 CFR 402.02). NOAA Fisheries' evaluates the relevance of the environmental baseline in the action area to the species' current status. In describing the environmental baseline, NOAA Fisheries evaluates essential features of habitat and the listed Pacific salmon ESUs affected by the proposed action.

In general, the environment for listed species in the Columbia River Basin (CRB), including those that migrate past or spawn upstream from the action area, has been dramatically affected by the development and operation of the Federal Columbia River Power System (FCRPS). Storage dams have eliminated mainstem spawning and rearing habitat, and have altered the natural flow regime of the Snake and Columbia Rivers, decreasing spring and summer flows, increasing fall and winter flow, and altering natural thermal patterns. Power operations cause fluctuation in flow levels and river elevations, affecting fish movement through reservoirs, disturbing riparian areas and possibly stranding fish in shallow areas as flows recede. The eight dams in the migration corridor of the Snake and Columbia Rivers kill or injure a portion of the smolts passing through the area. The low velocity movement of water through the reservoirs behind the dams slows the smolts' journey to the ocean and enhances the survival of predatory fish (Independent Scientific Group 1996, National Research Council 1996). Formerly complex mainstem habitats in the Columbia, Snake, and Willamette Rivers have been reduced, for the most part, to single channels, with floodplains reduced in size, and off-channel habitats eliminated or disconnected from the main channel (Sedell and Froggatt 1984; Independent Scientific Group 1996; and Coutant 1999). The amount of large woody debris in these rivers has declined, reducing habitat complexity and altering the rivers' food webs (Maser and Sedell 1994).

Other human activities that have degraded aquatic habitats or affected native fish populations in the CRB include stream channelization, elimination of wetlands, construction of flood control dams and levees, construction of roads (many with impassable culverts), timber harvest, splash dams, mining, water withdrawals, unscreened water diversions, agriculture, livestock grazing, urbanization, outdoor recreation, fire exclusion/suppression, artificial fish propagation, fish harvest, and introduction of beside-native species (Henjum *et al.* 1994; Rhodes *et al.* 1994; National Research Council 1996; Spence *et al.* 1996; and Lee *et al.* 1997). In many watersheds, land management and development activities have: (1) Reduced connectivity (*i.e.*, the flow of energy, organisms, and materials) between streams, riparian areas, floodplains, and uplands; (2) elevated fine sediment yields, degrading spawning and rearing habitat; (3) reduced large woody material that traps sediment, stabilizes streambanks, and helps form pools; (4) reduced vegetative canopy that minimizes solar heating of streams; (5) caused streams to become straighter, wider, and shallower, thereby reducing rearing habitat and increasing water temperature fluctuations; (6) altered peak flow volume and timing, leading to channel changes and potentially altering fish migration behavior; and (7) altered floodplain function, water tables and base flows (Henjum *et al.* 1994; McIntosh *et al.* 1994; Rhodes *et al.* 1994; Wissmar *et al.* 1994; National Research Council 1996; Spence *et al.* 1996; and Lee *et al.* 1997).

To address problems inhibiting salmonid recovery in CRB tributaries, the Federal resource and land management agencies developed the *All H Strategy* (Federal Caucus 2000). Components of the *All H Strategy* commit these agencies to increased coordination and a fast start on protecting and restoring salmonid habitat.

The BA did not evaluate of the environmental baseline conditions within the action area using the "matrix of pathways and indicators" (MPI) described in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NOAA Fisheries 1996b). Although this method was not used, within the Lower John Day River subbasin, the biological requirements of the listed species are not currently being met under the environmental baseline. Conditions in the action area would have to improve, and any further degradation of the baseline, or delay in improvement of these conditions would probably further decrease the likelihood of survival and recovery of the listed species under the environmental baseline.

During the in-water work window, West Fork Bridge Creek is expected to be dry or have elevated stream temperatures that would make it unlikely for MCR steelhead to be present in the project area. In the event that water is present, the area will be surveyed by a fish biologist for MCR steelhead and, if found, fish will be captured with dip nets and transported below the Projects to suitable water.

The John Day River basin in Eastern Oregon contains one of the few remaining runs of completely wild steelhead in the Columbia River system. Historically, no more than 35,000 steelhead once ran up the John Day river to spawn. Adult escapement within the John Day basin is estimated by conducting annual spawning ground counts. Generally, approximately 100 miles of stream length is surveyed, with extrapolation of redd density to the entire 1,800 miles of available spawning habitat. Since 1959, densities have averaged 6.1 redds/mile. Spawning escapement has dropped precipitously throughout the basin since 1988. Estimates of spawner escapement over the last 20 years have ranged from a high of 36,400 in 1988, to a low of 3900 in 1995. An average density of 8.3 redds per mile was observed in 2002. Densities were better than the ten-year average of 2.7 redds per mile.

NOAA Fisheries (1996c) describes water diversion as a factor contributing to the decline of the Middle Columbia (MCR) steelhead evolutionarily significant unit (ESU). Water diversions for irrigation are a primary cause of the degraded state of aquatic habitats in the Lower John Day River. Irrigation structures exert numerous influences on the river system that have the potential to negatively affect listed fish. Water temperatures both above and below the structures may be altered as flows are depleted. Water temperatures may reach sublethal or lethal levels when instream flows are depleted during irrigation season. Seasonal flows may be altered as natural flood events are eliminated or minimized. Excessive amounts of silt may accumulate above the structures. Increased sedimentation may result in minor siltation of downstream spawning gravels. During periods of high flow, structures such as those proposed may not be a barrier to fish passage but may become one during times when instream flows are low. Even in instances where fish passage is provided around these barriers by way of a weir or other similar structure,

fish movement may be delayed or impeded. Many irrigation diversions occur within the John Day basin watershed. Due to these diversions, in low-water years, fish may encounter passage and spawning difficulties in upper basin streams. Flows necessary for migration may be unavailable during early summer months and low-flow conditions may limit the use of some potential spawning areas. In order to divert water for irrigation purposes, many landowners use systems typically known as "gravel push-up dams". Push-up dams are usually less than three feet high and somewhat porous, yet they may limit upstream and downstream migration of juvenile salmonids and upstream migration of adults during low flow periods. Water temperatures and unsuitable habitat may also block movement of juveniles searching for thermal refugia during summer months.

Other factors contributing to the decline of steelhead in the John Day basin include: Hydropower development, agriculture, hatchery introgression, predation, and harvest. Effects associated with all of these activities include: (1) Alteration of streambank and channel morphology; (2) alteration of ambient stream water temperatures; (3) degradation of water quality; (4) elimination of spawning and rearing habitat; (5) fragmentation of available habitats; (6) elimination of downstream recruitment of spawning gravels and large woody debris; (7) removal of riparian vegetation resulting in increased stream bank erosion; and (8) increased sediment inputs to spawning and rearing areas resulting in the loss of channel complexity, pool habitat, suitable gravel substrate, and large woody debris.

Pacific salmon populations also are substantially affected by variation in the freshwater and marine environments. Ocean conditions are a key factor in the productivity of Pacific salmon populations. Stochastic events in freshwater (flooding, drought, snowpack conditions, volcanic eruptions, *etc.*) can play an important role in a species' survival and recovery, but those effects tend to be localized compared to the effects associated with the ocean. The survival and recovery of these species depends on their ability to persist through periods of low natural survival due to ocean conditions, climatic conditions, and other conditions outside the action area. Freshwater survival is particularly important during these periods because enough smolts must be produced so that a sufficient number of adults can survive to complete their oceanic migration, return to spawn, and perpetuate the species. Therefore, it is important to maintain or restore essential features in order to sustain the ESU through these periods. Additional details about the importance of freshwater survival to Pacific salmon populations can be found in Federal Caucus (2000), NOAA Fisheries (2000), and Oregon Progress Board (2000).

2.2 Analysis of Effects

Effects of the action are defined as "the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent to the action, that will be added to the environmental baseline" (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing the value of habitat for meeting the species' biological requirements. Indirect effects are defined in 50 CFR 402.02 as "those that are caused by the proposed action and are later in time, but still are reasonably certain to occur". They include the effects on listed species or

habitat of future activities that are induced by the proposed action and that occur after the action is completed. "Interrelated actions are those that are part of a larger action and depend on the larger action for their justification" (50 CFR 403.02). "Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR 402.02).

In the jeopardy analysis, NOAA Fisheries evaluates the effects of proposed actions on listed species and seeks to answer the question of whether the species can be expected to survive with an adequate potential for recovery. In watersheds where critical habitat has been designated, NOAA Fisheries must make a separate determination of whether the action will result in the destruction or adverse modification of critical habitat (ESA, section 3, (3) and section 3(5A)).

2.2.1 Habitat Effects

NOAA Fisheries will consider any scientifically credible analytical framework for determining an activity's effect. To streamline the consultation process and to lead to more consistent effects determinations across agencies, NOAA Fisheries, where appropriate, recommends that action agencies use the MPI and procedures in NOAA Fisheries (1996b), particularly when their proposed action would take place in forested montane environments. NOAA Fisheries is working on similar procedures for other environments. Actions that do not maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of MCR steelhead

For the streams typically considered in salmon habitat-related consultations, a watershed is a logical unit for analysis of potential effects of an action (particularly for actions that are large in scope or scale). Healthy salmonid populations use habitats throughout watersheds (Naiman *et al.* 1992), and riverine conditions reflect biological, geological and hydrological processes operating at the watershed level (Nehlsen *et al.* 1997; Bisson *et al.* 1997; and NOAA Fisheries 1999).

Although NOAA Fisheries prefers watershed-scale consultations due to greater efficiency in reviewing multiple actions, increased analytic ability, and the potential for more flexibility in management practices, often it must analyze effects at geographic areas smaller than a watershed or basin due to a proposed action's scope or geographic scale. Analyses that are focused at the scale of the site or stream reach may not be able to discern whether the effects of the proposed action will contribute to or be compounded by the aggregate of watershed impacts. This loss of analytic ability typically should be offset by more risk averse proposed actions and ESA analysis in order to achieve parity of risk with the watershed approach (NOAA Fisheries 1999).

The BA for the Projects provides an analysis of the effects of the proposed action on MCR steelhead in the action area. The information in the BA, and the best scientific and commercial data available to evaluate elements of the proposed action that have the potential to affect the listed fish or essential features of their habitat.

The replacement of push-up dams with permanent irrigation structures that allow for fish passage on Bridge Creek is LAA MCR steelhead. The expected effects of the Projects are: (1) Sediment from the construction activities will increase in the short term, and will harass juvenile MCR steelhead rearing in the area; (2) minor alteration of the present flow regime due to the ability to divert water more efficiently; and (3) habitat access will be improved by creating improved passage conditions to approximately ten miles of habitat that will be made more accessible to MCR steelhead. Habitat access will be partially restored by implementing these Projects. All other habitat conditions in the MPI for Bridge Creek are expected to be maintained in the long term. The greatest potential for direct effects from the construction work required to install the new structures will be delivery of additional sediment to the stream and the harassment of fish during construction.

Potential impacts to listed salmonids from the in-water and near-water construction activities include both direct and indirect effects. Potential direct effects include mortality from exposure to suspended sediments (turbidity) and contaminants resulting for construction. Potential indirect effects include behavioral changes resulting from elevated turbidity level (Sigler *et al.* 1984, Berg and Northcote 1985, Whitman *et al.* 1982, Gregory 1998), during river bank habitat alterations.

Suspended sediment and turbidity influences on fish reported in the literature range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorus fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). In addition, a potentially positive reported effect is providing refuge and cover from predation (Gregory and Levings 1988).

Fish that remain in turbid, or elevated TSS, waters experience a reduction in predation from piscivorus fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this provides a beneficial trade off (*e.g.*, enhanced survival) to the cost of potential physical effects (*e.g.*, reduced growth). Turbidity levels of about 23 Nephalometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical determinant of the occurrence and importance of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and

larger juvenile salmonids may be less affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjornn and Reiser 1991). However, research shows that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

Turbidity, at moderate levels, has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish, and may also interfere with feeding (Spence *et al.* 1996). Newly emerged salmonid fry may be vulnerable to even moderate amounts of turbidity (Bjornn and Reiser 1991). Other behavioral effects on fish, such as gill flaring and feeding changes, have been observed in response to pulses of suspended sediment (Berg and Northcote 1985). Fine, redeposited sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and to reduce incubation success (Bell 1991) and cover for juvenile salmonids (Bjornn and Reiser 1991). These effects are expected to be minimal due to the use of sediment control measures such as silt fences and straw bales and completing all instream construction activities during periods of low flow (July and August).

Increased sedimentation may also lead to increased embeddedness of spawning substrates downstream of the Projects. Instream work scheduled for these Projects will take place during the in-water work window for the area (July 15th to August 31st). Due to the typically low flows present in the project area during this time, sedimentation rates are expected to be minimal. Disturbance of riparian vegetation could result from operation of heavy machinery near the stream and could lead to decreased shade, increased water temperatures, and decreased streambank stability until riparian vegetation is re-established. By conducting the proposed actions during the in-water work window, and utilizing protective measures such as silt fencing, the amount of sediment mobilized in the water column will be minimal. The USFWS has included several conservation measures that will ensure riparian disturbance resulting from the construction activities will remain minimal. These include operating from existing roads and planting and seeding disturbed areas. For these reasons, the disturbance should be minimal and temporary.

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of the back-hoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a waterbody or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). Similarly, exposure to herbicides can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, and target and non target riparian vegetation (Spence *et al.* 1996). Because the proposed Projects are designed to meet the intent of the SLOPES II Opinion (refer to: 2003/00850), the risk of accidental spills is expected to be minimal. Equipment will be stored and fueled at least 150 feet from the stream

Excavation in the stream channel associated with the irrigation improvement work will elevate the risk for chemical contamination of the aquatic environment within the action area. Because the potential for chemical contamination should be localized and brief, the probability of mortality is negligible. Scheduling the in-water work for the in-water work window will minimize the risk from chemical contamination during these activities.

The aforementioned adverse effects are expected to be temporary and of short duration. The maximum period of time during which construction activities will occur is one month. In the long term, all aquatic habitat factors will be maintained. Fish passage and stream channel morphology at the project sites will improve as a result of the proposed actions.

Additionally, direct effects to juvenile MCR steelhead will occur in the form of harassment if they are moved from the action area. Once these juvenile MCR steelhead are frightened from cover and swim to open water, they become more susceptible to predation from larger fish and avian predators. After fish are removed from the project site, the work area will be isolated to keep fish out of the construction site. The use of block nets will temporarily interrupt juvenile MCR steelhead rearing, feeding, and sheltering. The work area isolation will result in disturbance and stress to listed MCR steelhead. Stress approaching or exceeding the physiological tolerance limits of individual fish can impair reproductive success, growth, resistance to infectious diseases, and general survival (Wedemeyer *et al.* 1990). Mechanical injury is also possible during holding or netting. The use of block nets to isolate the work area will temporarily interrupt juvenile MCR steelhead rearing, feeding, and sheltering.

Manipulation of the streambed to install the new structures is expected to create sediment which may enter the stream. The short-term increase in turbidity could result in temporary reduction in feeding efficiency for juvenile steelhead within the action area. Increased sedimentation may also lead to increased embeddedness of spawning substrates downstream of the Projects. Due to the typically low flows present in Bridge Creek during the time of implementation, sedimentation rates are expected to be minimal. Diverting water around the disturbance within the channel will reduce continual sediment production during implementation. Additionally, the use of silt fence and straw bails will help reduce the amount of sediment introduced into the active stream.

Disturbance of riparian vegetation could result in decreased shade, leading to increased water temperatures until riparian vegetation is re-established. Reduction in riparian vegetation is expected to be minimal because the Projects will disturb only the minimal area needed for the installation of the new diversion structures. Manipulation of streambanks will allow for mobilization of some sediment. In the event of a rain event during construction, sediment in excess of what may normally be expected could enter the flowing stream. Because disturbed areas will be revegetated after implementation, the increased risk of sediment input from bank disturbance will be reduced once the new vegetation begins to grow. Additionally, the elimination of annual riparian disturbance from the creation of push-up dams may allow new riparian vegetation to establish.

In the long term, the Projects will have beneficial effects on MCR steelhead habitat. Elimination of the current practice of creating push-up dams annually, which partially blocks juvenile MCR steelhead passage, and installing structures that allow for fish passage will allow for year-round passage to all life stages of MCR steelhead. The Projects will improve access to approximately ten miles of habitat that will be used for migration, spawning, and rearing in the Bridge Creek watershed.

2.2.2 Species Effects

The effect that a proposed action has on particular essential features or MPI pathways can be translated into a likely effect on population growth rate. In the case of this consultation, it is not possible to quantify an incremental change in survival for MCR steelhead.

While population growth rates have been calculated at the large ESU scale, changes to the environmental baseline from the proposed action were described only within the action area (in this case, a watershed). An action that improves habitat in a watershed, and thus helps meet essential habitat feature requirements, may therefore, increase lambda for the portion of the ESU in the action area.

Based on the effects described above, the Projects will have a long-term, positive effect on the survival and recovery of the MCR steelhead. Because Bridge Creek is a small watershed compared to the range of the MCR steelhead ESU, a population increase may not be measurable at the ESU scale. However, because access is being restored to a watershed which the MCR steelhead currently uses, an increase in the distribution and/or population within the watershed may be expected to occur.

2.2.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation". These activities within the action area also have the potential to adversely affect the listed species. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being reviewed through separate section 7 consultation processes. Federal actions that have already undergone section 7 consultations have been added to the description of the environmental baseline in the action area.

State, tribal, and local government actions will likely be in the form of legislation, administrative rules or policy initiatives. Government and private actions may encompass changes in land and water uses–including ownership and intensity–any of which could adversely affect listed species or their habitat. Government actions are subject to political, legislative, and fiscal uncertainties.

The withdrawal of water for irrigation purposes along the John Day River is reasonably certain to occur far into the future. Farming has played a major historic role in the economies of

communities throughout the John Day Basin. Farmers rely upon the water they procure from the John Day River through diversions, such as those associated with diversions in the proposed action area, to sustain a variety of crops. Very few diversions are metered and water rights are severely over allocated. Though many farmers and ranchers have taken measures to increase water use efficiency on their land, portions of the John Day River are essentially dry during certain periods of the year. Adverse impacts to fish resulting from the over allocation of water rights and subsequent diversion of flows from the John Day River include increased water temperatures, low instream flows, high levels of sediment and pollution, potential stranding of fish, and the fragmentation of aquatic habitat.

The USFWS identified no other specific private or state actions that are reasonably certain to occur in the future that would affect MCR steelhead or their habitat within the action area. NOAA Fisheries expects slight improvements in MCR steelhead reproductive success because of improved fish passage conditions in the West Fork Bridge Creek. Given that the MCR steelhead is listed as threatened, NOAA Fisheries assumes that non-federal land owners will take steps to curtail or avoid land management practices that would result in the take of MCR steelhead. NOAA Fisheries is not aware of any specific future actions which are reasonably certain to occur on non-federal lands. NOAA Fisheries assumes that future private, tribal, and state actions will continue at similar intensities as in recent years.

2.2.4 Consistency with Listed Species ESA Recovery Strategies

Recovery is defined by NOAA Fisheries regulations (50 CFR 402) as an "improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4 (a)(1) of the Act". Recovery planning is underway for listed Pacific salmon in the Northwest with technical recovery teams identified for each domain. Recovery planning will help identify measures to conserve listed species and increase the survival of each life stage. NOAA Fisheries also intends that recovery planning identify the areas/stocks most critical to species conservation and recovery and thereby evaluate proposed actions on the basis of their effects on those areas/stocks.

Recovery planning will identify the feasible measures that are needed in each stage of the salmonid life cycle for conservation and survival within a reasonable time. Measures are feasible if they are expected both to be implemented and to result in the required biological benefit. A time period for recovery is reasonable depending on the time requirements for implementation of the measures and the confidence in the survival of the species while the plan is implemented. The plan must demonstrate the feasibility of its measures, the reasonableness of its time requirements, and how the elements are likely to achieve the conservation and survival of the listed species based on the best science available.

NOAA Fisheries has developed guidelines for basin-level, multispecies recovery planning on which individual, species-specific recovery plans can be founded. "Basin-level" encompasses habitat, harvest, hatcheries, and hydro. The recovery planning analysis is contained in the document entitled *Conservation of Columbia Basin Fish: Final Basinwide Salmon Recovery*

Strategy (hereafter, the Basinwide Recovery Strategy [Federal Caucus 2000]). The Basinwide Recovery Strategy will be used to guide recovery planing for MCR steelhead until a plan specific to MCR steelhead in the lower John Day River subbasin is accomplished. The recovery plan will provide the particular statutorily required elements of recovery goals, criteria, management actions, and time estimates that are not developed in the Basinwide Recovery Strategy.

Among other things, the Basinwide Recovery Strategy calls for restoration of degraded habitats on a priority basis to produce significant measurable benefits for listed anadromous and resident fish. Immediate and long-term priorities for restoration measures relevant to this consultation include the following general habitat improvements for tributary reaches:

- Restoring tributary flows.
- Addressing passage obstructions.
- Protecting the currently productive habitat.
- Increasing the amount of habitat.
- Improve water quality.

The Basinwide Recovery Strategy also established these specific habitat improvement action priorities for the JDR basin:

- Fix flow, screening and passage problems in priority subbasins [in the] JDR Basin.

Until the species-specific recovery plans are developed, the FCRPS Opinion and the related Basinwide Recovery Strategy provides the best guidance for judging the significance of an individual action relative to the species-level biological requirements. In the absence of completed recovery plans, NOAA Fisheries strives to ascribe the appropriate significance to actions to the extent available information allows. Where information is not available on the recovery needs of the species, either through recovery planning or otherwise, NOAA Fisheries applies a conservative substitute that approximates what would be expected of an action if such information were available.

The USFWS has specific commitments to uphold under the Basinwide Salmon Recovery Strategy. For Federal lands, PACFISH, the Northwest Forest Plan, and land management plans define these commitments. Because the proposed action will improve passage and increase the amount of habitat available for MCR steelhead use, the proposed action is consistent with the specific commitment and primary objectives of the Basinwide Salmon Recovery Strategy.

2.3 Conclusions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the: (1) Definition of the

biological requirements and current status of the listed species; and (2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

NOAA Fisheries has determined that, when the effects of the subject actions addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead.

NOAA Fisheries believes that the proposed actions will cause some minor, short-term increases in stream turbidity and sedimentation rates in West Fork Bridge Creek. It is also possible that some mortality of juvenile MCR steelhead may result from the instream work as well as the work area isolation operations. Vegetation removal is expected to result in a temporary decrease in shade, as well as some behavior modification in the form of avoidance of areas without sufficient cover. These effects will diminish over time as newly planted riparian vegetation is established. MCR steelhead are expected to avoid habitats negatively affected by construction activities in the short term until conditions improve. The Projects are expected to provide long-term benefits to MCR steelhead through habitat access enhancement.

NOAA Fisheries' conclusions are based on the following considerations: (1) All instream work will occur during the in-water work window for this area (July 15th - August 31st), and instream work will be limited to the amount described in the BA; (2) all disturbed soils will be replanted with native vegetation; and (3) a net increase in fish habitat access will result from the Projects' activities. Thus, the proposed action is not expected to impair currently properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.4 Conservation Recommendations

Conservation recommendations are defined as "discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information" (50 CFR 402.02). Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. NOAA Fisheries has no conservation recommendations to make at this time regarding the action addressed in this Opinion.

2.5 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease, pending conclusion of the reinitiated consultation.

2.6 Incidental Take Statement

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of listed species without a specific permit or exemption [16 USC 1532(19)]. Harm is defined by regulation as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." [50 CFR 222.102] Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering." [50 CFR 17.3] Incidental take is defined as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." [50 CFR 402.02] The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.6.1 Amount or Extent of Take

The proposed action is reasonably certain to result in incidental take of juvenile MCR steelhead. NOAA Fisheries is reasonably certain the incidental take described here will occur because: (1) The listed species are known to occur in the action area; and (2) the proposed action is likely to cause impacts significant enough to cause death or injury, or impair feeding, breeding, migrating, or sheltering for the listed species.

Incidental take is likely to result in the form of injury or death of juvenile MCR steelhead during instream work. The temporary increase in sediment and turbidity is likely to cause fish to avoid disturbed areas of the stream, both within and downstream of the project area. Effects from turbidity are expected to be of short duration, because turbidity levels will quickly return to preconstruction levels once instream work is completed. The potential for incidental take in the form of death or sub-lethal effects also exists if toxicants are introduced into the water. Harm in the form of behavior modification (avoidance) is likely to result from riparian disturbance, vegetation removal, and decreased shade. This harm is expected to be reduced as newly planted riparian vegetation is established.

Because of the inherent biological characteristics of aquatic species such as MCR steelhead, the likelihood of discovering take attributable to this action is very limited. Take associated with the effects of actions such as these are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, although NOAA Fisheries expects the habitat-related effects of these actions to cause some low level incidental take, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take because of those habitat-related effects. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable". The authorized take includes only take caused by the proposed action within the action area as defined in this Opinion.

In addition, incidental take in the form of capture and possible mortality is expected during the work isolation and fish relocation operation. The USFWS will not use electroshocking to remove fish from the project area so as to minimize potential effects caused by fish relocation activities in warmer waters. Because of warm temperatures and current limited fish distribution within the project area during the in-water work window, NOAA Fisheries expects very few fish to be present in the project area during the Projects' implementation. Because few fish are expected to be present, and the seine operation is expected to cause very little or no mortality, the expected level of juvenile MCR steelhead killed should not exceed five individual fish. Project design precautionary measures planned by the USFWS for the fish survey operation should keep mortality to a minium. The authorized take includes only take caused by the proposed action within the action area as defined in this Opinion. Take which may occur from the operation and maintenance of the proposed irrigation structures is not covered by this Opinion.

2.6.2 Reasonable and Prudent Measures

Reasonable and prudent measures (RPMs) are non-discretionary measures to minimize take, that may or may not already be part of the description of the proposed action. They must be implemented as binding conditions for the exemption in section 7(o)(2) to apply. The USFWS has the continuing duty to regulate the activities covered in this incidental take statement. If the USFWS fails to require the applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective

coverage of section 7(o)(2) may lapse. NOAA Fisheries believes that activities carried out in a manner consistent with these RPMs, except those otherwise identified, will not necessitate further site-specific consultation. Activities which do not comply with all relevant RPMs will require further consultation.

NOAA Fisheries believes that the following RPMs are necessary and appropriate to minimize take of MCR steelhead resulting from implementation of the action.

The USFWS shall:

1. Minimize the likelihood of incidental take resulting from the general construction activities' riparian disturbance and in-water work required to complete the Projects addressed in this Opinion.

2. Minimize the amount and extent of incidental take from construction activities in or near watercourses by ensuring that an effective spill prevention, containment, and control plan is developed, implemented, and maintained to avoid or minimize point-source pollution both into and within watercourses over the short term and the long term.

3. Minimize the likelihood of incidental take resulting from work area isolation operations.

4. Minimize the likelihood of incidental take by ensuring that water withdrawals do not increase.

5. Monitor the effects of the proposed action to determine the actual Projects' effects on listed fish (50 CFR 402.14 (I)(3)). Monitoring should detect adverse effects of the proposed action, assess the actual levels of incidental take in comparison with anticipated incidental take documented in the Opinion, and detect circumstances where the level of incidental take is exceeded.

2.6.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the action must be implemented in compliance with the following terms and conditions, which implement the RPMs described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (general construction, riparian disturbance, and in-water work), the USFWS shall ensure that:

    a. Minimum area. Confine construction impacts to the minimum area necessary to complete the Projects.

b. Timing of in-water work. Work below the bankfull elevation[5] will be completed using the most recent ODFW preferred in-water work period, as appropriate for the project area, unless otherwise approved in writing by NOAA Fisheries.

c. Cessation of work. Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

d. Fish screens. Have a fish screen installed, operated and maintained according to NOAA Fisheries' fish screen criteria[6] on each water intake used for project construction, including pumps used to isolate an in-water work area.

e. Treated wood.

   i. Use of treated wood[7] that may contact flowing water or that will be placed over water where it will be exposed to mechanical abrasion or where leachate may enter flowing water is not authorized.

   ii. Visually inspect treated wood before final placement to detect and replace wood with surface residues and/or bleeding of preservative.

f. Preconstruction activity. Complete the following actions before significant[8] alteration of the project area.

   i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

   ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite.

      (1) A supply of sediment control materials (*e.g.*, silt fence, straw bales[9]).

      (2) An oil-absorbing, floating boom whenever surface water is present.

   iii. Temporary erosion controls. All temporary erosion controls will be in-place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.

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[5] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

[6] National Marine Fisheries Service, *Juvenile Fish Screen Criteria* (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996) (guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (http://www.nwr.noaa.gov/1hydrop/hydroweb/ferc.htm).

[7] 'Treated wood' means lumber, pilings, and other wood products preserved with alkaline copper quaternary (ACQ), ammoniacal copper arsenate (ACA), ammoniacal copper zinc arsenate (ACZA), copper naphthenate, chromated copper arsenate (CCA), pentachlorophenol, or creosote.

[8] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

[9] When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.

g. Temporary access roads. All temporary access roads will be constructed as follows:

i. Existing ways. Use existing roadways, travel paths, and drilling pads whenever possible, unless construction of a new way or drilling pad would result in less habitat take. When feasible, eliminate the need for an access road by walking a tracked drill or spider hoe to a survey site, or lower drilling equipment to a survey site using a crane.

ii. Steep slopes. Temporary roads or drilling pads built mid-slope or on slopes steeper than 30% are not authorized.

iii. Minimizing soil disturbance and compaction. Minimize soil disturbance and compaction whenever a new temporary road or drill pad is necessary within 150 feet[10] of a stream, waterbody or wetland by clearing vegetation to ground level and placing clean gravel over geotextile fabric, unless otherwise approved in writing by NOAA Fisheries.

iv. Temporary stream crossings.

(1) Minimize the number of temporary stream crossings.

(2) Design temporary road crossings as follows.

(a) Survey and map any potential spawning habitat within 300 feet downstream of a proposed crossing.

(b) Do not place a stream crossing at known or suspected spawning areas, or within 300 feet upstream of such areas if spawning areas may be affected.

(c) Design the crossing to provide for foreseeable risks (*e.g.*, flooding and associated bedload and debris, to prevent the diversion of streamflow out of the channel and down the road if the crossing fails).

(d) Vehicles and machinery will cross riparian areas and streams at right angles to the main channel wherever possible.

v. Obliteration. When the project is complete, obliterate all temporary access roads that will not be in footprint of a new bridge or other permanent structure, stabilize the soil, and revegetate the site. Abandon and restore temporary roads in wet or flooded areas by the end of the in-water work period.

h. Heavy Equipment. Restrict use of heavy equipment as follows:

i. Choice of equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally sized, low ground pressure equipment).

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[10] Distances from a stream or waterbody are measured horizontally from, and perpendicular to, the bankfull elevation, the edge of the channel migration zone, or the edge of any associated wetland, whichever is greater. 'Channel migration zone' means the area defined by the lateral extent of likely movement along a stream reach as shown by evidence of active stream channel movement over the past 100 years (e.g., alluvial fans or floodplains formed where the channel gradient decreases, the valley abruptly widens, or at the confluence of larger streams).

ii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain and store vehicles as follows.

(1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.

(2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland, unless otherwise approved in writing by NOAA Fisheries.

(3) Inspect all vehicles operated within 150 feet of any stream, waterbody or wetland daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by NOAA Fisheries.

(4) Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below bankfull elevation until all visible external oil, grease, mud, and other visible contaminates are removed.

(5) Diaper all stationary power equipment (*e.g.*, generators, cranes, stationary drilling equipment) operated within 150 feet of any stream, waterbody or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

i. Site preparation. Conserve native materials for site restoration.

i. If possible, leave native materials where they are found.

ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iii. Stockpile any large wood[11], native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

j. Isolation of in-water work area. If adult or juvenile fish are reasonably certain to be present, or if the work area is 300 feet upstream of spawning habitats, completely isolate the work area from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials, unless otherwise approved in writing by NOAA Fisheries.

k. Earthwork. Complete earthwork (including drilling, excavation, dredging, filling and compacting) as quickly as possible.

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[11] For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

i. Site stabilization. Stabilize all disturbed areas, including obliteration of temporary roads, following any break in work unless construction will resume within four days.

ii. Source of materials. Obtain boulders, rock, woody materials and other natural construction materials used for the project outside the riparian area.

l. Site restoration. Prepare and carry out a site restoration plan as necessary to ensure that all streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows. Make the written plan available for inspection on request by the NOAA Fisheries.

i. General considerations.

(1) Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (*e.g.*, large woody debris), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

(2) Streambank shaping. Restore damaged streambanks to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation, unless precluded by pre-project conditions (*e.g.*, a natural rock wall).

(3) Revegetation. Replant each area requiring revegetation before the first April 15 following construction. Use a diverse assemblage of species native to the project area or region, including grasses, forbs, shrubs and trees. Noxious or invasive species may not be used.

(4) Pesticides. Take of ESA-listed species caused by any aspect of pesticide use is not included in the exemption to the ESA take prohibitions provided by this incidental take statement. Pesticide use must be evaluated in an individual consultation, although mechanical or other methods may be used to control weeds and unwanted vegetation.

(5) Fertilizer. Do not apply surface fertilizer within 50 feet of any stream channel.

ii. Plan contents. Include each of the following elements.

(1) Responsible party. The name and address of the party(s) responsible for meeting each component of the site restoration requirements, including providing and managing any financial assurances and monitoring necessary to ensure restoration success.

(2) Baseline information. This information may be obtained from existing sources (*e.g.*, land use plans, watershed analyses, subbasin plans), where available.

(a) A functional assessment of adverse effects, *i.e.*, the location, extent and function of the riparian and aquatic

resources that will be adversely affected by construction and operation of the project.

(b) The location and extent of resources surrounding the restoration site, including historic and existing conditions.

(3) Goals and objectives. Restoration goals and objectives that describe the extent of site restoration necessary to offset adverse effects of the project, by aquatic resource type.

(4) Performance standards. Use these standards to help design the plan and to assess whether the restoration goal is met. While no single criterion is sufficient to measure success, the intent is that these features should be present within reasonable limits of natural and management variation.

(a) Bare soil spaces are small and well dispersed.

(b) Soil movement, such as active rills or gullies and soil deposition around plants or in small basins, is absent or slight and local.

(c) If areas with past erosion are present, they are completely stabilized and healed.

(d) Plant litter is well distributed and effective in protecting the soil with few or no litter dams present.

(e) Native woody and herbaceous vegetation, and germination microsites, are present and well distributed across the site.

(f) Vegetation structure is resulting in rooting throughout the available soil profile.

(g) Plants have normal, vigorous growth form, and a high probability of remaining vigorous, healthy and dominant over undesired competing vegetation.

(h) High impact conditions confined to small areas necessary access or other special management situations.

(i) Streambanks have less than 5% exposed soils with margins anchored by deeply rooted vegetation or coarse-grained alluvial debris.

(j) Few upland plants are in valley bottom locations, and a continuous corridor of shrubs and trees provide shade for the entire streambank.

(5) Work plan. Develop a work plan with sufficient detail to include a description of the following elements, as applicable.

(a) Boundaries for the restoration area.

(b) Restoration methods, timing, and sequence.

(c) Water supply source, if necessary.

(d) Woody native vegetation appropriate to the restoration site.[12] This must be a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees. This may include allowances for natural regeneration from an existing seed bank or planting.
(e) A plan to control exotic invasive vegetation.
(f) Elevation(s) and slope(s) of the restoration area to ensure they conform with required elevation and hydrologic requirements of target plant species.
(g) Geomorphology and habitat features of stream or other open water.
(h) Site management and maintenance requirements.

2. To implement reasonable and prudent measure #2 (pollution and erosion control), the USFWS shall ensure that:

a. Pollution and Erosion Control Plan. Prepare and carry out a pollution and erosion control plan to prevent pollution caused by surveying or construction operations. The plan must be available for inspection on request by NOAA Fisheries.
i. Plan Contents. The pollution and erosion control plan will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
(1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
(2) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations, staging areas, and roads being decommissioned.
(3) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.
(4) A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
(5) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

[12] Use references sites to select vegetation for the mitigation site whenever feasible. Historic reconstruction, vegetation models, or other ecologically-based methods may also be used as appropriate.

(6) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.

ii. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.[13]

(1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.

b. Construction discharge water. Treat all discharge water created by construction (*e.g.*, concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows.

i. Water quality. Design, build and maintain facilities to collect and treat all construction discharge water, including any contaminated water produced by drilling, using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

iii. Pollutants. Do not allow pollutants including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours to contact any wetland or the 2-year floodplain.

3. To implement reasonable and prudent measure #3 (water withdrawals), the USFWS shall ensure that:

a. No increase in the rate, volume, or timing of water diversions will occur.
b. Diversion structures will be screened to meet NOAA Fisheries criteria.

4. To implement reasonable and prudent measure #4 (work area isolation), the USFWS shall ensure that:

a. Capture and release. Before and intermittently during pumping to isolate an in-water work area, attempt to capture and release fish from the isolated area using

[13] 'Working adequately' means that project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream of the turbidity causing activity.

trapping, seine, electrofishing, or other methods as are prudent to minimize risk of injury.

i. The entire capture and release operation must be conducted or supervised by a fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish.
ii. Do not use electrofishing if water temperatures exceed 18°C.
iii. If electrofishing equipment is used to capture fish, comply with NOAA Fisheries' electrofishing guidelines.[14]
iv. Handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seine and transfer procedures to prevent the added stress of out-of-water handling.
v. Transport fish in aerated buckets or tanks.
vi. Release fish into a safe release site as quickly as possible, and as near as possible to capture sites.
vii. Do not transfer ESA-listed fish to anyone except NOAA Fisheries personnel, unless otherwise approved in writing by NOAA Fisheries.
viii. Obtain all other Federal, state, and local permits necessary to conduct the capture and release activity.
ix. Allow NOAA Fisheries or its designated representative to accompany the capture team during the capture and release activity, and to inspect the team's capture and release records and facilities.

5. To implement reasonable and prudent measure #5 (monitoring), the USFWS shall:

a. Reporting. Within one year of project completion, the USFWS will submit a monitoring report to NOAA Fisheries describing the USFWS' success in meeting the terms and conditions contained in this Opinion. The monitoring report will include the following information.

i. Project identification
(1) Project name.
(2) Type of activity.
(3) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map.
(4) USFWS contact person.
(5) Starting and ending dates for work completed.

[14] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

ii. Photo documentation. Photos of habitat conditions at the project and any compensation site(s), before, during, and after project completion.[15]
   (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
   (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

iii. Other data. Additional project-specific data, as appropriate for individual projects.
   (1) Work cessation. Dates work ceased due to high flows, if any.
   (2) Fish screen. Evidence of compliance with NOAA Fisheries' fish screen criteria.
   (3) Pollution control. A summary of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
   (4) Site preparation.
      (a) Total cleared area – riparian and upland.
      (b) Total new impervious area.
   (5) Isolation of in-water work area, capture and release.
      (a) Supervisory fish biologist – name and address.
      (b) Methods of work area isolation and take minimization.
      (c) Stream conditions before, during and within one week after completion of work area isolation.
      (d) Means of fish capture.
      (e) Number of fish captured by species.
      (f) Location and condition of all fish released.
      (g) Any incidence of observed injury or mortality of listed species.
   (6) Streambank protection.
      (a) Type and amount of materials used.
      (b) Project size – one bank or two, width and linear feet.
   (7) Site restoration. Photo or other documentation that site restoration performance standards were met.
   (8) Long-term habitat loss. The same elements apply as for monitoring site restoration.

b. Effectiveness monitoring. Gather any other data or analyses the USFWS deems necessary or helpful to complete an assessment of habitat trends in stream and riparian conditions as a result of this project. The USFWS may use existing monitoring efforts for this purpose if those efforts can provide information specific to the objective of identifying habitat trends.

[15] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

c. Lethal take. If a sick, injured, or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at (360)418-4246. The finder must take care in handling sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

d. Report submission. Submit a copy of the report to the Oregon Office of NOAA Fisheries.

Oregon State Director
Habitat Conservation Division
National Marine Fisheries Service
Attn: 2003/00921
525 NE Oregon Street
Portland, OR 97232

3. MAGNUSON-STEVENS ACT

3.1 Statutory Requirements

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan.

Pursuant to the MSA:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§ 305(b)(2)).

- NOAA Fisheries must provide conservation recommendations for any Federal or state action that may adversely affect EFH (§ 305(b)(4)(A));

- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NOAA Fisheries EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§ 305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA § 3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required for any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action may adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects on EFH.

3.2 Identification of EFH

Pursuant to the MSA, the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Federally-managed Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other waterbodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Actions

The proposed action and action area are detailed above in Sections 1.2 and 1.3 of this document. The action area includes habitats that have been designated as EFH for various life-history stages of chinook salmon.

3.4 Effects of Proposed Action on EFH

The effects on chinook salmon are the same as those for MCR steelhead and are described in detail in section 2.2.1 of this document, the proposed action may result in short- and long-term adverse effects on a variety of habitat parameters. These adverse effects are:

1. Riparian disturbance from temporary road construction and construction activities performed from the bank.

2. Increased sedimentation from instream construction activities.

3.5 Conclusion

NOAA Fisheries concludes that the proposed action will adversely affect designated EFH for chinook salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures described in the BA will be implemented by the USFWS, and believes that these measures are sufficient to minimize, to the maximum extent practicable, the following EFH effects: (1) Riparian disturbance; (2) increased sedimentation; and (3) improved habitat access. Although, these conservation measures are not sufficient to fully address the remaining adverse effects to EFH, specific terms and conditions outlined in § 2.7.3 are generally applicable to designated EFH for chinook salmon, and do address these adverse effects. Consequently, NOAA Fisheries recommends that the following terms and conditions be implemented as EFH conservation measures.

1. Term and Condition 1. (a., f., g., h,. i., k., and m.) will minimize riparian disturbance from the Projects' implementation.

2. Term and Condition 1. (b., c., f., g., h,. j., k., l., and m.) as well as, 2. (a., and b.) will minimize sedimentation and pollution of Bridge Creek as a result of the Projects' implementation.

3.7 Statutory Response Requirement

Pursuant to the MSA (§ 305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the

response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The USFWS must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(l)).

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